

CLAIMS

1. A heat exchanger comprising:

5 - an enclosure (1) provided with a plurality of tubes (2) in which a heat-transfer fluid circulates, said fluid conveying cleaning balls (8);

10 - an outlet collector (5) connected to the enclosure (1) for discharging the heat-transfer fluid coming from said enclosure, this collector (5) being made as a single part; and

 - a device (13) placed in said collector (5) for separating the cleaning balls (8) from the fluid conveying them.

15 2. The exchanger as claimed in claim 1, in which the outlet collector (5) has a first portion (11) forming a flow converger and a second portion (12) forming a nozzle, which is joined to said flow converger (11) and in which the separation device (13) is placed.

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3. The exchanger as claimed in claim 2, in which said flow converger (11) and said nozzle (12) form an approximately right-angled elbow.

25 4. The exchanger as claimed in claim 2 or 3, in which the separation device (13) comprises a plurality of grids (14, 15, 16, 17) placed across said nozzle (12), combined in pairs (14, 15; 16, 17) in order to form a filtering structure with a W-shaped profile converging
30 on the opposite side from said enclosure (1) onto a device (32) placed in the elbow (5) in order to recover the cleaning balls (8) separated from the heat-transfer fluid by the separation device (13).

35 5. The exchanger as claimed in claim 4, in which grid (14, 15, 16, 17) comprises a row of spaced-apart parallel blades (18, 19).

6. The exchanger as claimed in claim 5, in which the blades (18, 19) of each grid (14, 15, 16, 17) are mounted on a common spindle (21, 22, 23, 24) that extends across the nozzle (12) of the collector (5).

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7. The exchanger as claimed in claim 6, in which each grid (14, 15, 16, 17) is mounted so as to rotate about its spindle (21, 22, 23, 24).

10 8. The exchanger as claimed in claim 7, which includes a device for measuring a fluid pressure difference on either side of the grids (14, 15, 16, 17), said device being connected to a system designed to cause the grids (14, 15, 16, 17) to rotate when this
15 pressure difference is greater than a predetermined value.

9. The exchanger as claimed in one of claims 4 to 8, which includes a circuit (35) for recycling the balls
20 (8), which connects the device (32) for recovering the balls (8) to a feed collector (3) joined to the enclosure (1) in order to feed the latter with heat-transfer fluid, via which feed collector (3) the balls (8) are reinjected into said enclosure (1).